glass or any other desired transparent material. Head-mounted device **10** may also include filter layers **132** and **140**. Filter layers **132** and **140** may serve to filter (e.g., block) light of a desired wavelength. In particular, filter layers **132** and **140** may be used to filter light of the wavelength that is used to control photochromic layer **100** (e.g., ultraviolet light **110** in FIG. **6**). To prevent the ultraviolet light from reaching the user's eyes **12** or others around the user, the photochromic layer **100** and optical coupler **26**C are interposed between ultraviolet filter layers **132** and **140** (e.g., filter layers **132** and **140** may transmit less than 5% of ultraviolet light, less than 1% of ultraviolet light, etc.). If a different type of light than ultraviolet light is used for the light source for the adjustable opacity system (e.g., infrared light), the filter layers **132** and **140** may filter that type of light. If desired, the filtering properties of filter layers **132** and **140** may be combined with another layer (e.g., filter layers **132** and **140** may be omitted and substrates **134** and **138** may have filtering properties).

[0061] Additional components of adjustable opacity system **20** and display **26** may be mounted on (supported by) support structure **16**. For example, light source **102** and display unit **26**U may be mounted on support structure **16**. Light source **102** and display unit **26**U may emit light into an input coupler region of optical coupler **26**C, for example. MEMS mirror array **104** and absorber **106** may also be supported by support structure **16**. As shown in FIG. **7**, absorbing material for absorbing excess ultraviolet light from light source **102** may be coated on additional components in the head-mounted device. Coating **108** in FIG. **7** coats the edge of optical coupler **26**C. This coating may absorb ultraviolet light (or other light form light source **102**) and may prevent ultraviolet light from exiting the optical coupler and reaching the user's eyes.

[0062] If desired, additional lenses may be incorporated at any desired location within head-mounted device **10**. For example, additional lenses may be incorporated in the optical path of display light from display unit **26**U. Additional lenses may also be incorporated in the optical path of ultraviolet light from light source **102**.

[0063] The example of FIG. **7**, where waveguide **26**C is used to both provide display light to the user and ultraviolet light to the photochromic layer, is merely illustrative. As previously mentioned, support structure **16** may instead support one waveguide for providing display light to the user and a second, separate waveguide for providing ultraviolet light to the photochromic layer.

[0064] Additionally, the examples of FIGS. **5-7** where photochromic layer **100** is planar are merely illustrative. In general, the photochromic layer (as well as the optical coupler and any other layers in the head-mounted device) may have any desired shape. For example, the photochromic layer may be curved along one or more axes if desired.

[0065] The foregoing is merely illustrative and various modifications can be made to the described embodiments. The foregoing embodiments may be implemented individually or in any combination.

What is claimed is:

1. A head-mounted device operable to receive real-world light from external real-world objects, the head-mounted device comprising:

a head-mounted support structure;

a display that generates images;

an optical coupler that is supported by the head-mounted support structure, that presents the real-world light for viewing, and that is configured to present the images from the display over the real-world light; and

an adjustable opacity system including a photochromic layer that is configured to selectively darken portions of the real-world light from view.

2. The head-mounted device defined in claim **1**, wherein the adjustable opacity system further comprises:

an ultraviolet light source configured to emit ultraviolet light;

a microelectromechanical mirror array configured to receive the ultraviolet light from the ultraviolet light source, wherein each mirror in the microelectromechanical mirror array has a first state in which the respective mirror directs the ultraviolet light towards a respective adjustable opacity pixel of the photochromic layer and a second state in which the respective mirror directs the ultraviolet light towards an ultraviolet light absorbing material; and

a heating element adjacent to the photochromic layer.

3. The head-mounted device defined in claim **1**, wherein the adjustable opacity system further comprises a light source that is configured to expose the photochromic layer to light to adjust an opacity of the photochromic layer.

4. The head-mounted device defined in claim **3**, wherein the optical coupler comprises a waveguide that receives the images from the display and presents the images for viewing.

5. The head-mounted device defined in claim **4**, wherein the waveguide receives the light from the light source and directs the light towards selected portions of the photochromic layer.

6. The head-mounted device defined in claim **5**, wherein an edge of the waveguide is coated with an absorbing material that is configured to absorb the light from the light source.

7. The head-mounted device defined in claim **4**, wherein the adjustable opacity system further comprises an additional waveguide that receives the light from the light source and directs the light towards selected portions of the photochromic layer.

8. The head-mounted device defined in claim **3**, wherein the optical coupler and the photochromic layer are interposed between first and second filter layers that filter the light from the light source.

9. The head-mounted device defined in claim **1**, wherein the adjustable opacity system further comprises a heating element that is adjacent to the photochromic layer and that is configured to heat the photochromic layer.

10. The head-mounted device defined in claim **1**, wherein the display is configured to emit visible light to generate the images and is configured to emit ultraviolet light that is received by the optical coupler to adjust an opacity of the photochromic layer.

11. A head-mounted device, comprising:

a head-mounted support structure;

a display that generates images;

a waveguide that is supported by the head-mounted support structure and that is configured to present the images for viewing;

a photochromic layer that is supported by the head-mounted support structure and that overlaps the waveguide; and